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1 AAAAAGAAAG GAAGAAAATG GAAATACAAC AAACACACCG
51 CGCCCTCTGG TTTCTCTCGC TTTAGTAGGA GCATTAGTCA GCATCACACC
101 GCAACAAAGT CATGCCGCCT TTTTCACAAC CGTGATCATT CCAGCCATTG
151 TTGGGGGTAT CGCTACAGGC ACCGCTGTAG GAACGGTCTC AGGGCTTCTT
201 AGCTGGGGGC TCAAACAAGC CGAAGAAGCC AATAAAACCC CAGATAAACC
251 CGATAAAGTT TGGCGCATTC AAGCAGGAAA AGGCTTTAAT GAATTCCTTA
301 ACAAGGAATA CGACTTATAC AGATCCCTTT TATCCAGTAA GATTGATGGA
351 GGTGTTGGGATT GGGGGAATGC CGCTAGGCAT TATTGGGTCA AAGGCGGGCA
401 ACAGAATAAG CTTGAAGTGG ATATGAAAGA CGCTGTAGGG ACTTATACCT
451 TATCAGGGCT TAGAACTTT ACTGGTGGGG ATTTAGATGT CAATATGCAA
501 AAAGCCACTT TACGCTTGGG CCAATTCAAT GGCAATTCTT TTACAAGCTA
551 TAAGGATAGT GCTGATCGCA CCACGAGAGT GATTTCAACG CTAAAAATAT
601 CTCAATTGAT AATTTTGCAG AAATCAACAA CTCGTGTGGG TTCTGGAGCC
651 GGGAGGAAAG CCAGCTCTAC GGTTTTGA CTGCAAGCTT CAGAAGGGAT
701 CACTAGCGAT AAAAACGCTG AAATTTCTCT TTATGATGGT GCCACGCTCA
751 ATTTGGCTTC AAGCAGCGTT AAATTAATGG GTAATGTGTG GATGGGCCGT
801 TTGCAATACG TGGGAGCGTA TTTGGCCCCT TCATACAGCA CGATAAACAC
851 TTCAAAAGTA ACAGGGGAAG TGAATTTTAA CCACCTCACT GTTGGCGATA
901 AAAACGCCGC TCAAGCGGGC ATTATCGCTA ATAAAAAGAC TAATATTGGC
951 AACTGGATT TGTGGCAAAG CGCCGGGTTA AACATTATCG CTCCTCCAGA
1001 AGGTGGCTAT AAGGATAAAC CCAATAATAC CCCTTCTCAA AGTGGTGCTA
1051 AAAACGACAA AAATGAAAGC GCTAAAAACG ACAAACAAGA GAGCAGTCAA
1101 AATAATAGTA ACACTCAGGT CATTAACCCA CCCAATAGTG CGCAAAAAC
1151 AGAAGTTCAA CCCACGCAAG TCATTGATGG GCCTTTTGCG GCGGGCAAAG
1201 ACACGGTTGT CAATATCAAC CGCATCAACA CTAACGCTGA TGGCAGGATT
1251 AGAGTGGGAG GGTTTAAAGC TTCTCTTACC ACCAATGCGG CTCATTTGCA
1301 TATCGGCAAA GCGGGTGTCA ATCTGTCCAA TCAAGCGAGC GGGCGCTCTC

FIG. 1A



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1351 TTATAGTGGA AAATCTAACT GGAATATCA CCGTTGATGG GCCTTAACT
1401 GTGAATAATC AAGTGGGTGG CTATGCTTTG GCAGGATCAA GCGCGAATTT
1451 TGAGTTTAAG GCTGGTACGG ATACCAAAAA CGGCACAGCC ACTTTTAATA
1501 ACGATATTAG TCTGGGAAGA TTTGTGAATT TAAAGGTGGA TGCTCATACA
1551 GCTAATTTTA AAGGTATTGA TACGGGTAAT GGTGGTTTCA ACACCTTAGA
1601 TTTTAGTGGC GTTACAGACA AAGTCAATAT CAACAAGCTC ATTACGGCTT
1651 CCACTAATGT GGCCGTAAAA AACTTCAACA TTAATGAATT GATTGTAAAA
1701 ACCAATGGGA TAAGTGTGGG GGAATATACT CATTTTAGCG AAGATATAGG
1751 CAGTCAATCG CGCATCAATA CCGTGCGTTT GGAAACTGGC ACTAGGTCAC
1801 TTTTCTCTGG GGGTGTTAAA TTAAAGGTG GCGAAAAAT GGTATAGAT
1851 GAGTTTTACT ATAGCCCTTG GAATTATTTT GACGCTAGAA ATATTAATAA
1901 TGTTGAAATC ACCAATAAAC TTGCTTTTGG ACCTCAAGGA AGTCCTTGGG
1951 GCACATCAAA ACTTATGTTC AATAATCTAA CCCTAGGTCA AAATGCGGTC
2001 ATGGATTATA GCCAATTTTT AAATTTAACC ATTCAAGGGG ATTTTCATCA
2051 CAATCAAGGC ACTATCAACT ATCTGGTCCG AGGTGGGAAA GTGGCAACCT
2101 TAAGCGTAGG CAATGCAGCA GCTATGATGT TTAATAATGA TATAGACAGC
2151 GCGACCGGAT TTTACAAACC GCTCATCAAG ATTAACAGCG CTCAAGATCT
2201 CATTAAAAAT ACAGAACATG TTTTATTGAA AGCGAAAATC ATTGGTTATG
2251 GTAATGTTTC TACAGGTACC AATGGCATTG GTAATGTAA TCTAGAAGAG
2301 CAATTCAAAG AGCGCCTAGC CCTTTATAAC AACAATAACC GCATGGATAC
2351 TTGTGTGGTG CGAAATACTG ATGACATTAA AGCATGCGGT ATGGCTATCG
2401 GCGATCAAAG CATGGTGAAC AACCTGACA ATTACAAGTA TCTTATCGGT
2451 AAGGCATGGA AAAATATAGG GATCAGCAAA ACAGCTAATG GCTCTAAAAT
2501 TTCGGTGTAT TATTTAGGCA ATTCTACGCC TACTGAGAAT GGTGGCAATA
2551 CCACAAATTT ACCCACAAC AGCACTAGCA ATGCACGTTC TGCCAACAAC
2601 GCCCTTGCAC AAAACGCTCC TTTCGCTCAA CCTAGTGCTA CTCCTAATTT
2651 AGTCGCTATC AATCAGCATG ATTTTGGCAC TATTGAAAGC GTGTTTGAAT

FIG. 1B



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2701 TGGCTAACCG CTCTAAAGAT ATTGACACGC TTTATGCTAA CTCAGGCGCT
2751 CAAGGCAGGG ATCTCTTACA AACCTTATTG ATTGATAGCC ATGATGCGGG
2801 TTATGCCAGA AAAATGATTG ATGCTACAAG CGCTAATGAA ATCACCAAGC
2851 AATTGAATAC GGCCACTACC ACTTTAAACA ACATAGCCAG TTTAGAGCAT
2901 AAAACCAGCG GCTTACAAAC TTTGAGCTTG AGTAATGCGA TGATTTTAAA
2951 TTCTCGTTTA GTCAATCTCT CCAGGAGACA CACCAACCAT ATTGACTCGT
3001 TCGCCAAACG CTTACAAGCT TTAAAAGACC AAAAATTCGC TTCTTTAGAA
3051 AGCGCGGCAG AAGTGTTGTA TCAATTTGCC CCTAAATATG AAAAACCTAC
3101 CAATGTTTGG GCTAACGCTA TTGGGGGAAC GAGCTTGAAT AATGGCTCTA
3151 ACGCTTCATT GTATGGCACA AGCGCGGGCG TAGACGCTTA CCTTAACGGG
3201 CAAGTGGAAG CCATTGTGGG CGGTTTTGGA AGCTATGGTT ATAGCTCTTT
3251 TAATAATCGT GCGAACTCCC TTAAGTCTGG GGCCAATAAC ACTAATTTTG
3301 GCGTGTATAG CCGTATTTTA ACCAACCAGC ATGAATTTGA CTTTGAAGCT
3351 CAAGGGGCAC TAGGGAGCGA TCAATCAAGC TTGAATTTCA AAAGCGCTCT
3401 ATTACAAGAT TTGAATCAAA GCTATCATT CTTAGCCTAT AGCGCTGCAA
3451 CAAGAGCGAG CTATGGTTAT GACTTCGCGT TTTTtaggAA CGCTTTAGTG
3501 TTAaaACCAa GCGTGGGTGT GAGCTATAAC CATTtaggTT CAACCAACTT
3551 TAAAGCAAC AGCaccaATC AAGTGGCTTT GAAAAATGGC TCTAGCAGTC
3601 AGCATTTATT CAACGCTAGC GCTAATGTGG AAGCGCGCTA TTATTATGGG
3651 GACACTTCAT ACTTCTACAT GAATGCTGGA GTTTTACAAG AGTTCGCTCA
3701 TGTTGGCTCT AATAACGCCG CGTCTTTAAA CACCTTTAAA GTGAATGCCG
3751 CTCGCAACCC TTAAATACC CATGCCAGAG TGATGATGGG TGGGGAATTA
3801 AAATTAGCTA AAGAAGTGTT TTTGAATTTG GGCgTTGTTT ATTTGCACAA
3851 TTTGATTTC AATATAGGCC ATTTcGCTTC CAATTTAGGA ATGAGGTATA
3901 GTTTCTAAAT ACCGCTCTTA AACCCATGCT CAAAGCATGG GTTTGAAATC
3951 TTACAAAACA

FIG. 1C



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1 MEIQQTHRKI NRPLVSLALV GALVSITPQQ SHAAFFTTVI IPAIVGGIAT
51 GTAVGTVSGL LSWGLKQAE ANKTPDKPDK VWRIQAGKGF NEFPNKEYDL
101 YRSLLSSKID GGWDWGNAAR HYWVKGGQQN KLEVDMKDAV GTYTLISGLRN
151 FTGGDLVDNM QKATLRLGQF NGNSFTSYKD SADRTTRVIS TLKISQLIIL
201 QKSTTRVGSG AGRKASSTVL TLQASEGITS DKNAEISLYD GATLNLASSS
251 VKLMGNVWMG RLQYVGAYLA PSYSTINTSK VTGEVNFNHL TVGDKNAAQA
301 GIIANKKTN I GTLDLWQSAG LNIIAPPEGG YKDKPNNTPS QSGAKNDKNE
351 SAKNDKQESS QNNSNTQVIN PPNSAQKTEV QPTQVIDGPF AGGKDTVNI
401 NRINTNADGT IRVGGFKASL TTNAHLHIG KGGVNLNQA SGRSLIVENL
451 TGNITVDGPL RVNNQVGGYA LAGSSANFEE KAGTDTKNGT ATFNNDISLG
501 RFVNLKVDAAH TANFKGIDTG NGGFNTLDFS GVTDKVNINK LITASTNVAV
551 KNFNINELIV KTNIGISVGEY THFSEDIGSQ SRINTVRLET GTRSLFSGGV
601 KFKGGKELVI DEFYYSPWNY FDARNIKNVE ITNKLAFGPQ GSPWGTSKLM
651 FNNLTGQNA VMDYSQFLNL TIQGDFFINQ GTINYLVRRG KVATLSVGNA
701 AAMMFNNDID SATGFYKPLI KINSAQDLIK NTEHVLLKAK IIGYGNVSTG
751 TNGISNVNLE EQFKERLALY NNNNRMDTCV VRNTDDIKAC GMAIGDQSMV
801 NNPDNYKYLI GKAWKNIGIS KTANGSKISV YYLGNSTPTE NGGNTTNLPT
851 NTTSNARSAN NALAQNAFPA QPSATPNLVA INQHDFGTIE SVFELANRSK
901 DIDTLYANSO AQGRDLLQTL LIDSHDAGYA RKMIDATSAN EITKQLNTAT
951 TTLNNIASLE HKTSGLQTL LSNAMILNSR LVNLSRRHTN HIDSFAKRLQ
1001 ALKDQKFASL ESAAEVLYQF APKYEKPTNV WANAIGGTSL NNGSNASLYG
1051 TSAGVDAYLN GQVEAIVGGF GSYGYSSFNN RANSLNSGAN NTNFGVYSRI
1101 LTNQHEFDFF AQGALGSDQS SLNFKSALLQ DLNQSYHYLA YSAATRASYG
1151 YDFAFFRNAL VLKPSVGVSY NHLGSTNFKS NSTNQVALKN GSSSQHLFNA
1201 SANVEARYYY GDTSYFYMNA GVLQEFAHVG SNNAASLNTF KVNAARNPLN
1251 THARVMMGGE LKLAKEVFLN LGVVYLHNLI SNIGHFASNL GMRYSF

FIG. 2

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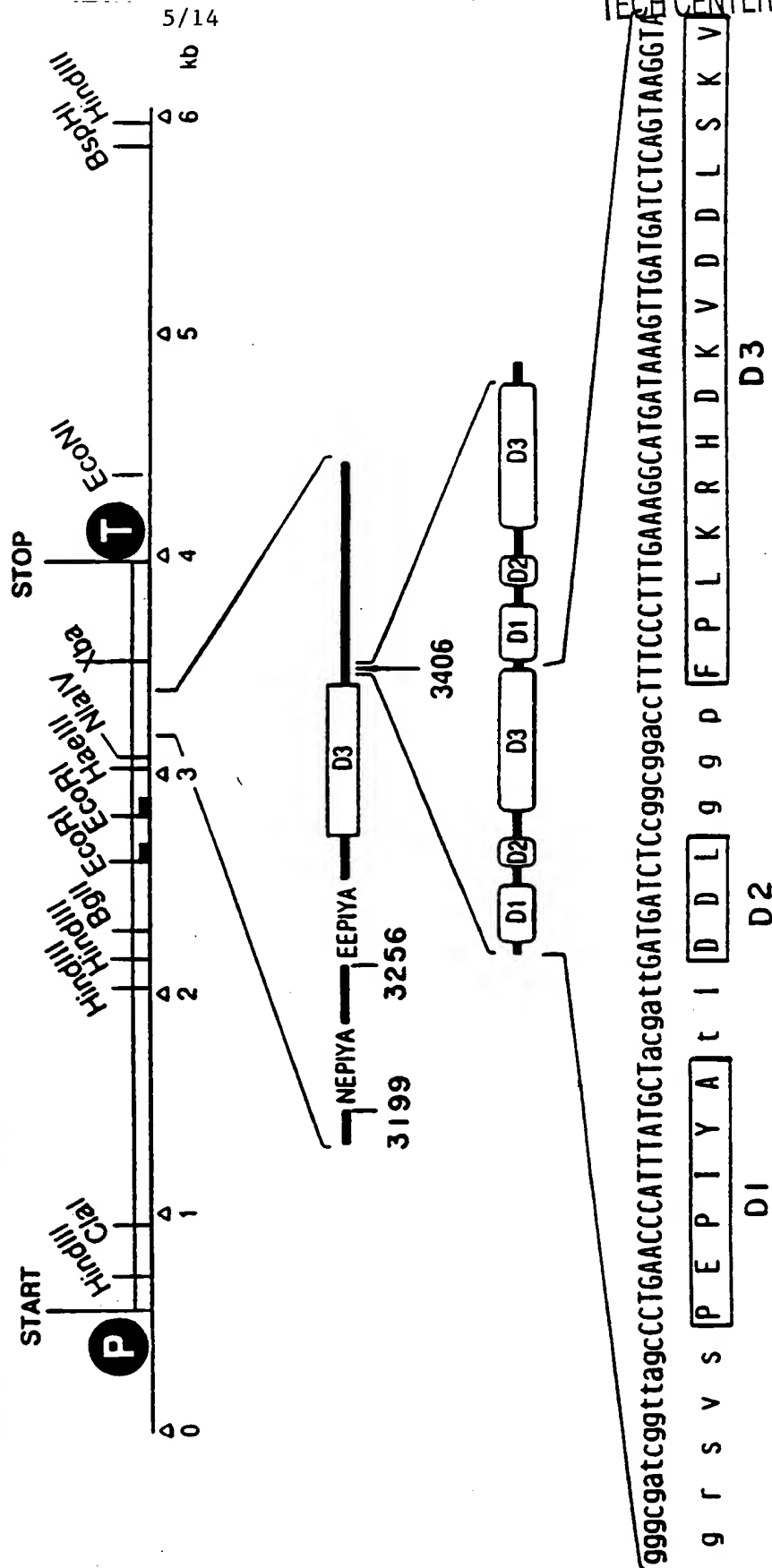
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FIG. 3

FIG. 3

857	<u>64/4</u>	1647		<u>214 24</u>	<u>2640</u>	<u>2776 G5</u>	3466		B I	<u>5925</u>
57/D	1294	1533007	2289		2641 A1	<u>3466</u>				





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CTCCATTTTAAGCAACTCCATAGACCACTAAAGAACTTTTTTTGAGGCTATCTTTGAAA
GCTTAATTATACATGCTATAGTAAGCATGACACACAAACCAAATTTTTTAGAACGCTT
TCAAAAAGATTCATTTCTTATTTCTTGTTCTTATTAAAGTTCTTTCATTTTAGCAAATTT
CTTTTTTCAATATTAATAATGATTAATGAAAAAAAAAAAAAATGCTTGATATTGTTGTAT
TTGACACTAACAAGATACCGATAGGTATGAACTAGGTATAGTAAGGAGAAACAATGACT
M T
AATAATCTTCAAGTAGCTTTTCTTAAAGTTGATAACGCTGTCGCTTCATACGATCCTGAT
23 N N L Q V A F L K V D N A V A S Y D P D
CAATTAAGGGAAGAATACTCCAATAAAGCGATCAAAAATCCTACCAAAAAGAATCAGTAT
63 Q L R E E Y S N K A I K N P T K K N Q Y
GAATCTTCCACAAAGAGCTTTCAGAAATTTGGGGATCAGCGTTACCGAATTTTCACAAGT
103 E S S T K S F Q K F G D Q R Y R I F T S
GAAAATATCATACAACCCCTATCCTTGATGATAAAGAGAAAGCGGAGTTTTTGAAATCT
143 E N I I Q P P I L D D K E K A E F L K S
ATGGGCGTGTTTGATGAGTCCTTGAAAGAAAGGCAAGAAGCAGAAAAAATGGAGAGCCT
183 M G V F D E S L K E R Q E A E K N G E P
GATGTCAAAGAAGCAATCAATCAAGAACCAGTTCCTCATGTCCAACCAGATATAGCCACT
223 D V K E A I N Q E P V P H V Q P D I A T
AATTTTTCTAAATTCACCTCTTGGCGATATGGAAATGTTAGATGTTGAGGGAGTCGCTGAC
263 N F S K F T L G D M E M L D V E G V A D
TTAATGGGGAGTCATAATGGCATAGAACCTGAAAAAGTTTCATTGTTGTATGGGGGCAAT
303 L M G S H N G I E P E K V S L L Y G G N
ACAATGTGGCTACAATAATTAATGTGCATATGAAAAACGGCAGTGGCTTAGTCATAGCA
343 N N V A T I I N V H M K N G S G L V I A
GGCTCACAACGAGCATTAAAGTCAAGAAGAGATCCAAAACAAAATAGATTTTCATGGAATTT
383 G S Q R A L S Q E E I Q N K I D F M E F
ACTGAGATTAAAGATTTCCAAAAGACTCTAAGGCTTATTAGACGCCCTAGGGAATGAT
423 T E I K D F Q K D S K A Y L D A L G N D
AATGGGGATTTGAGCTACACTCTCAAAGATTATGGGAAAAAGCAGATAAAGCTTTAGAT
463 N G D L S Y T L K D Y G K K A D K A L D
TATTCTAATTTCAAATACACCAACGCCTCCAAGAATCCCAATAAGGGTGTAGGCGTTACG

FIG. 4A



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ATCTGTCCTATTGATTTGTTTTCCATTTTGTTCATGTGGATCTTGTGGATCACAAAC 120
CATGTGCTCACCTTGACTAACCATTCTCCAACCATACTTTAGCGTTGCATTTGATTTCT 240
TTGTTAATTGTGGGTAAAAATGTGAATCGTCCTAGCCTTTAGACGCCTGCAACGATCGGG 360
AATGAGAATGTTCAAAGACATGAATTGACTACTCAAGCGTGTAGCGATTTTGTAGCAGTCT 480
AACGAAACCATTGACCAACAACCACAAACCGAAGCGGCTTTTAACCCGCAGCAATTTATC 600
N E T I D Q Q P Q T E A A F N P Q Q F I
CAAAAACCAATCGTTGATAAGAACGATAGGGATAACAGGCAAGCTTTTGAAGGAATCTCG 720
Q K P I V D K N D R D N R Q A F E G I S
TTTTCAGACTTTATCAATAAGAGCAATGATTTAATCAACAAAGACAATCTCATTGATGTA 840
F S D F I N K S N D L I N K D N L I D V
TGGGTGTCCCATCAAAACGATCCGTCTAAAATCAACACCCGATCGATCCGAAATTTTATG 960
W V S H Q N D P S K I N T R S I R N F M
GCCAAACAATCTTTTGCAGGAATCATTATAGGGAATCAAATCCGAACGGATCAAAAGTTC 1080
A K Q S F A G I I I G N Q I R T D Q K F
ACTGGTGGGGATTGGTTGGATATTTTCTCTCATTTATATTTGACAAAAACAATCTTCT 1200
T G G D W L D I F L S F I F D K K Q S S
ACCACCACCGACATACAAGGCTTACCGCCTGAAGCTAGAGATTTACTTGATGAAAGGGGT 1320
T T T D I Q G L P P E A R D L L D E R G
ATTGATCCCAATTACAAGTTCAATCAATTATTGATTCACAATAACGCTCTGTCTTCTGTG 1440
I D P N Y K F N Q L L I H N N A L S S V
GGTGGTCCTGGAGCTAGGCATGATTGGAACGCCACCGTTGGTTATAAAGACCAACAAGGC 1560
G G P G A R H D W N A T V G Y K D Q Q G
GGTGGTGAGAAAGGGATTAACAACCCTAGTTTTTATCTCTACAAAGAAGACCAACTCACA 1680
G G E K G I N N P S F Y L Y K E D Q L T
CTTGACAAAATAATGCTAAATTAGACAACCTTGAGCGAGAAAGAGAAGGAAAAATTCGA 1800
L A Q N N A K L D N L S E K E K E K F R
CGTATTGCTTTTGTTCCTAAAAAGACACAAACATTCAGCTTTAATTACTGAGTTTGGT 1920
R I A F V S K K D T K H S A L I T E F G
AGGGAGAAAAATGTTACTCTTCAAGGTAGCCTAAACATGATGGCGTGATGTTTGTGAT 2040
R E K N V T L Q G S L K H D G V M F V D
AATGGCGTTTCCCATTTAGAAAGTAGGCTTTAACAAGGTAGCTATCTTTAATTTGCCTGAT 2160

FIG. 4B



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503 Y S N F K Y T N A S K N P N K G V G V T
TTAAATAATCTCGCTATCACTAGTTTCGTAAGGCGGAATTTAGAGGATAAACTAACCCT
543 L N N L A I T S F V R R N L C D K L T T
GAATTGGTTGGAAAACTTTAACTTCAATAAAGCTGTAGCTGACGCTAAAAACACAGGC
583 E L V G K T L N F N K A V A D A K N T G
CATTTAGAGAAAGAAGTAGAGAAAAAATTGGAGAGCAAAAGCGGCAACAAAAATAAAATG
623 H L E K E V E K K L E S K S G N K N K M
GCTAATAGAGACGCAAGAGCAATCGCTTACGCTCAGAATCTTAAAGGCATCAAAAGGGAA
663 A N R D A R A I A Y A Q N L K G I K R E
GAATTCAAAAATGGCAAAAATAAGGATTTTCAGCAAGGCAGAAGAAACACTAAAGCCCTT
703 E F K N G K N K D F S K A E E T L K A L
AATGCAGCTTTGAATGAATTCAAAAATGGCAAAAATAAGGATTTTCAGCAAGGTAACGCAA
743 N A A L N E F K N G K N K D F S K V T Q
AAAGTTGATAATCTCAATCAAGCGGTATCAGTGGCTAAAGCAACGGGTGATTTTCAGTAGG
783 K V D N L N Q A V S V A K A T G D F S R
CAAAAAAATGAAAGTCTCAATGCTAGAAAAAATCTGAAATATATCAATCCGTAAAGAAT
823 Q K N E S L N A R K K S E I Y Q S V K N
AAAACTTTTCGGACATCAAGAAAGAGTTGAATGCAAACTTGGAAATTTCAATAACAAT
863 K N F S D I K K E L N A K L G N F N N N
CAAGCAGCTAGCCTTGAAGAACCCATTTACGCTCAAGTTGCTAAAAAGGTAAATGCAAAA
903 Q A A S L E E P I Y A Q V A K K V N A K
CCTTTGAAAAGGCATGATAAAGTTGATGATCTCAGTAAGGTAGGGCTTTCAAGGAATCAA
943 P L K R H D K V D D L S K V G L S R N Q
TTTGGCAATCTAGAGCAAACGATAGACAAGCTCAAAGATTCTACAAAACACAATCCCATG
983 F G N L E Q T I D K L K D S T K H N P M
TACGCTACTAACAGCCACATACGCATTAATAGCAATATCAAAAATGGAGCAATCAATGAA

FIG. 4C



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N G V S H L E V G F N K V A I F N L P D
AAAGGATTGTCCCCACAAGAAGCTAATAAGCTTATCAAAGATTTTTTGAGCAGCAACAAA 2280
K G L S P Q E A N K L I K D F L S S N K
AATTATGATGAAGTGAAAAAGCTCAGAAAGATCTTGAAAAATCTCTAAGGAAACGAGAG 2400
N Y D E V K K A Q K D L E K S L R K R E
GAAGCAAAAGCTCAAGCTAACAGCCAAAAAGATGAGATTTTTGCGTTGATCAATAAAGAG 2520
E A K A Q A N S Q K D E I F A L I N K E
TTGTCTGATAAACTTGAAAATGTCAACAAGAATTTGAAAGACTTTGATAAATCTTTTGAT 2640
L S D K L E N V N K N L K D F D K S F D
AAAGGTTCCGGTGAAAGATTTAGGTATCAATCCAGAATGGATTTCAAAGTTGAAAACCTT 2760
K G S V K D L G I N P E W I S K V E N L
GCAAAAAGCGACCTTGAAAATTCCGTTAAAGATGTGATCATCAATCAAAGGTAACGGAT 2880
A K S D L E N S V K D V I I N Q K V T D
GTAGAGCAAGCGTTAGCCGATCTCAAAAATTTCTCAAAGGAGCAATTGGCCCAACAAGCT 3000
V E Q A L A D L K N F S K E Q L A Q Q A
GGTGTGAATGGAACCCTAGTCGGTAATGGGTTATCTCAAGCAGAAGCCACAACCTCTTTCT 3120
G V N G T L V G N G L S Q A E A T T L S
AACAATAATGGACTCAAAAACGAACCCATTTATGCTAAAGTTAATAAAAAGAAAGCAGGG 3240
N N N G L K N E P I Y A K V N K K K A G
ATTGACCGACTCAATCAAATAGCAAGTGTTTGGGTGTTGTAGGGCAAGCAGCGGGCTTC 3360
I D R L N Q I A S G L G V V G Q A A G F
GAATTGGCTCAGAAAATTGACAATCTCAATCAAGCGGTATCAGAAGCTAAAGCAGGTTTT 3480
E L A Q K I D N L N Q A V S E A K A G F
AATCTATGGGTTGAAAGTGCAAAAAAGTACCTGCTAGTTTGTGAGCGAAACTAGACAAT 3600
N L W V E S A K K V P A S L S A K L D N
AAAGCGACCGGCATGCTAACGCAAAAAACCCTGAGTGGCTCAAGCTCGTGAATGATAAG 3720

FIG. 4D



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1023 Y A T N S H I R I N S N I K N G A I N
ATAGTTGCGCATAATGTAGGAAGCGTTCTTTGTCAGAGTATGATAAAATTGGCTTC
1063 I V A H N V G S V P L S E Y D K I G F
GTAAAAGACACTAATTCTGGCTTTACGCAATTTTAAACCAATGCATTTTCTACAGCA
1103 V K D T N S G F T Q F L T N A F S T A
GGTTTCCAAAAATCTTAAAGGATTAAGGAATACCAAAAACGCAAAAACCCCTTG
1143 G F Q K S
TGAATGCTACCAATTCATGGTATCATATCCCCATACATTTCGTATCTAGCGTAGGAAG
AACTCTGTAAAATCCCTATTATAGGGACACAGAGTGAGAACCAACTCTCCCTACGG
GACAGACACTAACGAAAGGCTTTGTTCTTTAAAGTCTGCATGGATATTTCTACCCC
CGAAAATTAATTAAGGGTTATAAAGAGAGCATAACTAGAAAAACAAGTAGCTATA
GAAAAATCAGAAAAACCATAGGAATTATCACACCTTATAATGCCCAAAAAGACGCT
ATGCCTTTCAAGGTGAAGAGGCAGATATTATTATTTATTCCACCGTGAAAATTGTG
ATCTCATTTTTGTGGGTAAAAAGTCTTTCTTTGAGAATTTATGAAGCGATGAGAAGA
CATTCTTCGCTTCAAACGCTTTCATAAATCTCTCTAAAGCGCTTTATAATCAACAC
TTATTAGCGTTACAATTTGAGCCATTCTTTAGCTTGTTTTCTAGCCAGATCACATC
CTGCAAATATCCTACAATAGCATCGCCCGAATGGATGAGTAGGGGGGGTGTGAAAG
TAAAATAATCACTTCGGGAAAATCTTTAAGGGAGTGAAATAATAACGCATGCAAGTT
TGCGAAACATTCAAATAGCCTTGTTGTTTCAGGGCATTGTCATAAGCGTTGGATTGG
GCTAAAATGCTTGGCTCAATCACGCCACAATAGGGATTTTGAATGCTTTTGCATC
TTGAAAAAATCCAAAGCCTCTAAGCCAAATTGCTTGATCGTAGTGGGGTCTTTAGTG
AGGCTTTTTTAAACGCTAAACCCTCCACACCGCTATCAAAAACGCTATTTTCATG
TCTTCATTGTCCTTAGTTTGTTCATTTTAGAATAGACAAAGCTT 5925

FIG. 4E



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E K A T G M L T Q K N P E W L K L V N D K
AACCAGAAGAATATGAAAGATTATTCTGATTCGTTCAAGTTTTCCACCAAGTTGAACAATGCT 3840
N Q K N M K D Y S D S F K F S T K L N N A
TCTTATTACTGCTTGGCGAGAGAAAATGCGGAGCATGGAATCAAGAAGTTAATACAAAAGGT 3960
S Y Y C L A R E N A E H G I K N V N T K G
CTAAAAGCGAGGGGTTTTTTAATACTCCTTAGCAGAAATCCCAATCGTCTTTAGTATTTGGGA 4080

TGTGCAAAGTTACGCCTTTGGAGATATGATGTGTGAGACCTGTAGGGAATGCGTTGGAGCTCA 4200
GCAACATCAGCCTAGGAAGCCCAATCGTCTTTAGCGGTTGGGCACTTCACCTTAAAATATCCC 4320
AAAAAGACTTAACCCTTTGCTTAAATTAAGTTTGATTGTGCTAGTGGGTTTCGTGCTATAGTG 4440
ACAAAGATCAAGTTCAAAAAATCATAGAGCTTTTAGAGCAAATTGATCGCGCTCTTAACCAAA 4560
TGCGATCAGAAGTGGA AAAATACGGCTTCAAGAATTTTGATGAGCTCAAATAGACACTGTGG 4680
GTAATCTTTCTTTCTTGCTAGATTCTAAACGCTTGAATGTGGCTATTTCTAGGGCAAAAGAAA 4800
ATATCTTTAGCGCTATTTTGCAAGTCTGTAGATAGGTAATCTTTTCAAAGATAATCATTAGA 4920
AATACCCTTATAGTGTGAGCTATAGCCCCTTTTTGGGAATTGAGTTATTTTGACTTTAAATTT 5040
GCCGCTCGCATGAAATTCCACTTTAGGGAATGCGTGTGCATTTTTTTAAGGGCGTATTTTTG 5160
GGCAAAATGCTCCATAAAATAGCCCTCAATTTTTTGAGCGATTAAGGGAAAATGCGTGCAACC 5280
TCTAACAATTCGCCCTCTAAATACTTTCTTCAATCAAAGGCACAAAAAGAGAAGTGGCTAAA 5400
ATCGTCGCTTTTGTCCCTAGCACTAAAATAGGGGCGTTTTTATCTTTTACTTGTGCGTTGATC 5520
TCTTCTAAAGCTAGAGCGCTCGCTGTGTTGCATGCCACAATCAATAATTCAATCTGGTGCGGT 5640
CCATAAGGCACTCTAGCCGTATCGCCATAATAGATGATTTTCATCAAATAATTGCGCTTTTAAA 5760
ACACTTTTTTAATTTAATGGGATTAATTAGGGATTTTATTTTTTCATTCATTAAGTTTAAAAAT 5880

FIG. 4F



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10 30 50
AAGCTTGCTGTCATGATCACAAAAAACACTAAAAAACATTATTATTAAGGATACAAAATG
M
70 90 110
GCAAAAGAAATCAAATTTTCAGATAGTGCGAGAAACCTTTTATTTGAAGGCGTGAGGCAA
A K E I K F S D S A R N L L F E G V R Q
130 150 170
CTCCATGACGCTGTCAAAGTAACCATGGGGCCAAGAGGCAGGAATGTATTGATCCAAAAA
L H D A V K V T M G P R G R N V L I Q K
190 210 230
AGCTATGGCGCTCCAAGCATCACCAAAGACGGCGTGAGCGTGGCTAAAGAGATTGAATTA
S Y G A P S I T K D G V S V A K E I E L
250 270 290
AGTTGCCAGTAGCTAACATGGGCGCTCAACTCGTTAAAGAAGTAGCGAGCAAAACCGCT
S C P V A N M G A Q L V K E V A S K T A
310 330 350
GATGCTGCCGGCGATGGCACGACCACAGCGACCGTGCTAGCTTATAGCATTTTTTAAAGAA
D A A G D G T T T A T V L A Y S I F K E
370 390 410
GGTTTGAGGAATATCACGGCTGGGGCTAACCTATTGAAGTGAAACGAGGCATGGATAAA
G L R N I T A G A N P I E V K R G M D K
430 450 470
GCTGCTGAAGCGATCATTAATGAGCTTAAAAAGCGAGCAAAAAAGTAGGCGGTAAAGAA
A A E A I I N E L K K A S K K V G G K E
490 510 530
GAAATCACCCAAGTGGCGACCATTTCTGCAAACCTCCGATCACAATATCGGGAAACTCATC
E I T Q V A T I S A N S D H N I G K L I
550 570 590
GCTGACGCTATGGAAAAAGTGGGTAAAGACGGCGTGATCACCGTTGAGGAAGCTAAGGGC
A D A M E K V G K D G V I T V E E A K G
610 630 650
ATTGAAGATGAATTGGATGTCGTAGAAGGCATGCAATTTGATAGAGGCTACCTCTCCCCT
I E D E L D V V E G M Q F D R G Y L S P

FIG. 5A



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      670              690              710
TATTTTGTAAACGAACGCTGAGAAAATGACCGCTCAATTGGATAATGCTTACATCCTTTTA
Y F V T N A E K M T A Q L D N A Y I L L
      730              750              770
ACGGATAAAAAAATCTCTAGCATGAAAGACATTCTCCCGCTACTAGAAAAAACCATGAAA
T D K K I S S M K D I L P L L E K T M K

      790              810              HindIII
GAGGGCAAACCGCTTTTAAATCATCGCTGAAGACATTGAGGGCGAAGCTTTAACGACTCTA
E G K P L L I I A E D I E G E A L T T L
      850              870              890
GTGGTGAATAAATTAAGAGGCGTGTGAATATCGCAGCGGTTAAAGCTCCAGGCTTTGGG
V V N K L R G V L N I A A V K A P G F G
      910              930              950
GACAGAAGAAAAGAAATGCTCAAAGACATCGCTATTTTAACCGGCGGTCAAGTCATTAGC
D R R K E M L K D I A I L T G G Q V I S
      970              990              1010
GAAGAATTGGGCTTGAGTCTAGAAAACGCTGAAGTGGAGTTTTTTAGGCAAAGCTGGAAGG
E E L G L S L E N A E V E F L G K A G R
      1030             1050             1070
ATTGTGATTGACAAAGACAACACCACGATCGTAGATGGCAAAGGCCATAGCGATGATGTT
I V I D K D N T T I V D G K G H S D D V
      1090             1110             1130
AAAGACAGAGTCGCGCAGATCAAAACCCAAATTGCAAGTACGACAAGCGATTATGACAAA
K D R V A Q I K T Q I A S T T S D Y D K
      1150             1170             1190
GAAAAATTGCAAGAAAGATTGGCTAAACTCTCTGGCGGTGTGGCTGTGATTAAAGTGGGC
E K L Q E R L A K L S G G V A V I K V G
      1210             1230             1250
GCTGCGAGTGAAGTGGAATGAAAGAGAAAAAAGACCGGGTGGATGACGCGTTGAGCGCG
A A S E V E M K E K K D R V D D A L S A
      1270             1290             1310
ACTAAAGCGGCGGTTGAAGAAGGCATTGTGATTGGTGGCGGTGCGGCTCTCATTGCGCG
T K A A V E E G I V I G G G A A L I R A

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FIG. 5B



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1330	1350	1370
GCTCAAAAAGTGCATTTGAATTTGCACGATGATGAAAAAGTGGGCTATGAAATCATCATG		
A Q K V H L N L H D D E K V G Y E I I M		
1390	1410	1430
CGCGCCATTAAAGCCCCATTAGCTCAAATCGCTATCAACGCTGGTTATGATGGCGGTGTG		
R A I K A P L A Q I A I N A G Y D G G V		
1450	1470	1490
GTCGTGAATGAAGTAGAAAAACACGAAGGGCATTTTTGGTTTTAACGCTAGCAATGGCAAG		
V V N E V E K H E G H F G F N A S N G K		
1510	1530	1550
TATGTGGATATGTTTAAAGAAGGCATTATTGACCCCTTAAAAGTAGAAAGGATCGCTCTA		
Y V D M F K E G I I D P L K V E R I A L		
1570	1590	1610
CAAAATGCGGTTTTCGGTTTTCAAGCCTGCTTTTAAACCACAGAAGCCACCGTGCATGAAATC		
Q N A V S V S S L L L T T E A T V H E I		
1630	1650	1670
AAAGAAGAAAAAGCGACTCCGGCAATGCCTGATATGGGTGGCATGGGCGGTATGGGAGGC		
K E E K A T P A M P D M G G M G G M G G		
1690	1710	1730
ATGGGCGGCATGATGTAAGCCCGCTTGCTTTTTAGTATAATCTGCTTTTAAAATCCCTTC		
M G G M M *		
1750	1770	1790
TCTAAATCCCCCCTTTCTAAATCTTTTTTTGGGGGGTGCTTTGATAAAACCGCTCG		
1810	1830	
CTTGTA AAAACATGCAACAAAAAATCTCTGTTAAGCTT		

FIG. 5C